3: Rasmussen--102-103 (c. 1923) 1932 Copper Eskimo
171

"The Umingmaktôrmiut do not know the use of the sealing stool of wood. If they are to stay long at a breathing hole they sit on a block of snow, as do the people in Victoria Land. The latter, however, know the expression: wooden sealing stool, which they call: that which resembles a footprint, as there is a [103] notch in one side of the stool, and this makes the seat look like a double footprint. They say that such sealing stools sometimes come drifting with the ice up from the Ualinermiut, who are thought to live up round Belley Island; the people themselves are never seen. This version is undoubtedly correct, for sealing stools of wood actually are used in the Mackenzie district, to which Belley Island belongs."

" APPENDIX II

DISTRIBUTION OF ESKIMO STRING FIGURES

Several facts have to be borne carefully in mind when studying the distribution of the figures in this collection. In the first place the number of ways in which the string is manipulated is limited, and slightly different combinations of the same movements will produce entirely different results. Hence new figures, which are only slight modifications of figures previously known, are liable to arise at any time; they may retain the old names and entirely supercede the older figures, or they may co-exist with them but be given new interpretations. From many regions only the completed figures are known, and these may sometimes be made in two or three ways. It is therefore very difficult to determine what figures are genetically connected, and still more difficult to decide which should be assigned the priority. [184B]

Another point to be remembered is that the Eskimos of different regions have come into much closer contact with one another during the last few generations. In the Mackenzie delta, for example, on may today find representatives of Siberian, central Alaskan, and Coronation gulf Eskimos living alongside of, or married to, Mackenzie natives proper. String figures are very easily passed on from one tribe to another, and

their distribution in pre-European times can hardly have been quite the same as it is today.

Another difficulty to be encountered is the practical impossibility of securing an absolutely complete collection from any one region. I believe that my north Alaskan and Coronation gulf collections are as nearly exhaustive as could well be obtained, and my Mackenzie delta collection only a little less so; but the collections from the eastern Eskimos, as well as those from Central Alaska and from Siberia, are fragmentary only. The mere fact that a certain figure has not been recorded from these latter places is no evidence that it is unknown there. On the other hand, if it appears in Central Alaska, but nowhere between northern Alaska and Coronation gulf, it is almost certain that it is unknown in those regions at the present time; it may, of course, have been forgotten there, and will recur farther east in Hudson bay, but the probabilities are against this supposition. Similarly a figure that occurs in Hudson bay or in Coronation gulf, but has not been found either in the Mackenzie delta or in northern Alaska, is probably absent also in Central Alaska and in Siberia. Exceptions are always liable to occur, but on the whole these principles will be found fairly accurate.

The table given below does not include all the figures that have been gathered by others from the Chukchee, Central Alaskan and Hudson bay regions, but only those for which I have parallels from the Eskimos between Alaska and Coronation gulf. The column

Eastern Eskimos includes the figures obtained by Boas from Hudson bay and Cumberland sound, together with the five recorded by Kroeber from Smith sound. All tricks and figures requiring the co-operation of two people have been omitted, because they have not been recorded outside of the region from North Alaska to Coronation gulf. [188B]

Perhaps the most striking feature about this table is the large number of figures that are known to nearly all Eskimo tribes outside of Greenland and Labrador, the two places from which no figures at all have as yet been recorded. It would seem to be a reasonable assumption that any figure known from Hudson bay to northern Alaska is or was known at some time in central Alaska (probably also to the Siberian Eskimos), thus giving a continuous distribution throughout the Eskimo tribes of North America. Such figures are clearly very ancient, but until we discover that they are found in Danish Greenland, or among Indian or Siberian tribes, it would be unwise to assign too remote a period for their origin. Undoubtedly the Eskimos were accumstomed to make string figures from the very earliest times, but any of those now known might easily have arisen during the last few hundred or a thousand years and been handed on from one tribe to another.

At least twenty-four figures are found from Alaska to Hudson bay;(1) probably the

"1. Nos. I, IV, XXI, XXIV, XXVI, XXVII, XXVIII, XXIX, XXXI, XXXII, XXXIII, XXXVI, XLI, XLIII, LXXVIII, LXXXVIII, CI, CXII, CXVII, CXXXIII, CXXXVII, CXXXIX, CXLVIII."

number is greater still, since no collection from any area is absolutely complete. Of these eleven are found also among the Chukchee. (2) There is nothing to show whether they arose in Asia or in America, or some in one continent and some in the other; but unless future researches show them to be equally wide-spread in northern Asia the presumption must be that the majority at least originated with the Eskimos and spread from them to the Chukchee.

Of figures that appear in one locality alone the table shows 69 examples. Some of these will no doubt be discovered in other regions, but this decrease in the number will be more than counterbalanced by new figures that are also limited to one district. So large a total indicates how popular the game is among the Eskimos, and how easily new figures can arise.

Two figures, LXII and CXXIV, are known only from the Siberian Eskimos of Indian point and from the adjacent Chukchee. The former probably spread from the Chukchee to the Eskimos, since its name, täŋaɣot , seems to be the same as tan·nin, which Bogoras gives as the Chukchee term for Russians, or, more usually, Koryaks. It is not unlikely, therefore, that the second figure came also from the Chukchee. One other figure, LXXXI, may have the same source. It appears in both central and northern Alaska, but not to the eastward, and in both these places it has the same name, and the

"2. Nos. IX, XXI, XXVI, XXIX, XXXI, XXXVI, XLI, XLIII, CI, CXII, CXXXVII."

same significance, as among the Chukchee. Of course it may have spread westward from the Alaskan Eskimos to the Chukchee, but then one would expect it to have spread eastward also to the Eskimos of the Mackenzie delta.

This leaves fifty figures that appear in two or more regions, but are not known to be widely distributed throughout the whole American Eskimo area. Now the western Eskimos from Siberia to the Mackenzie delta have been in close contact with one another for at least two centuries. The Mackenzie delta natives used to meet their kinsmen of northern Alaska each summer at Barter island or at some other point along the Arctic coast; and the north Alaskan natives were in close contact with those of Kotzebue sound, who in turn conducted a regular trade with the Asiatic coast natives. It is only to be expected, therefore, that certain figures have drifted eastward along this route; some may not have passed beyond northern Alaska, while others reached beyond the Mackenzie delta. Cases where such figures can be recognized are bound to be rare, but LXXIV appears to be an example. Its opening movements are peculiar, and appear in two other figures only, both of which are confined to the western Eskimos. Among the Siberian Eskimos LXXIV has a very definite significance, but this fades away towards the east and beyond the Mackenzie delta the figure seems unknown. Another example is CXXXVI, which from its meaning would seem to have arisen among the Eskimos around Bering strait. [189B] A much clearer case is furnished by CXXVII and CXXVIII. The

movements in these two figures are very unusual among the Eskimos. CXXVII appears at Indian point in Siberia as a complete series of four figures that illustrate a consecutive story. On the Kobuk river in Alaska the four have dwindled down to three, but the story is still partly retained. The same three figures, with the meaning largely lost, are known to the inland Eskimos of the Endicott mountains in northern Alaska. They are known also at Barrow, but with an entire loss of meaning; for all three are grouped together under one name, the very interpretation of which is uncertain. In the Mackenzie delta but one of the series was found, strangely enough the first, slightly modified and with an altogether new interpretation. Finally, in Coronation gulf, none of the figures are known, but the same peculiar movements recur in the figure of 'the loon' (CXXVIII). It seems fairly certain that the original figure must have come from somewhere around Bering strait, whence it travelled by way of the Kobuk and Noatak rivers to the north coast, spreading westward to Barrow and eastward to Coronation gulf.

Doubtless there are cases where the drift was westward rather than eastward, although I can discover no certain example of this in my collection. Many other figures besides those mentioned above testify by their manner of construction, by their names, and by the chants that accompany them, to the close connection between the Eskimos of the Mackenzie delta and the Alaskan natives. In this respect the string figures merely corroborate what we already know from historical sources, and from the distribution

of labrets, fish-nets and other articles.

Rather more importance attaches to the figues when we pass on to Coronation gulf. We know that during the 19th century, probably also at a still earlier period, the natives around Dolphin and Union strait, at the western end of the gulf, maintained a more or less sporadic intercourse with their kinsmen farther west; while the natives at the eastern end of the gulf, and some of the inhabitants of Victoria island, have been in close contact for many years with the Netchilik Eskimos to the eastward, and, to a lesser extent, with tribes to the south who dwell inland from Hudson bay. The Copper Eskimos of Coronation gulf, therefore, have been exposed to influences from both the east and the west, and the question at once arises as to which group of Eskimos they are more closely affiliated. Their string figures may be worth examining in some detail from this point of view.

The table shows eighty-three figures from the Copper Eskimos. They may be tabulated thus:

24 are common to nearly all Eskimo tribes. (1)

"1. Nos. I, IV, IX, XXI, XXIV, XXVI, XXVII, XXVIII, XXIX, XXXI, XXXII, XXXIII, XXXVI, XLI, XLIII, LXXVIII, LXXXVIII, CI, CXII, CXVII, CXVIII, CXXXVII, CXXXIX, CXLVIII."

25 have not been found outside of Coronation gulf. (2)
29 appear also in the Mackenzie delta or Alaska, but have not been reported from the eastern Eskimos. (3)
4 appear both among the eastern Eskimos and in the Mackenzie delta, but have not been discovered in Alaska. (4)
1 appears also among the eastern Eskimos, but is not known from any other region. (5)

[190B] In the first group of figures, those known to nearly all Eskimo tribes, it is noticeable that the eastern and Coronation gulf natives have a similar interpretation for CXVII, but the interpretation among the western natives is different. IX is a doubtful case of the same thing. In IV, XXXII, and LXXVIII, on the other hand, the interpretations in

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"2. Nos. XI, XII, XLIV, LIII, LXVI, LXVII, LXVIII, LXIX, LXXI, LXXII, LXXXII, XC, XCIII, XCVIII, XCIX, C, CIII, CVI, CXX, CXXI, CXXII, CXXIII, CXXXII, CXL, CLII.

3. Nos. XIII, XV, XVII, XVIII, XXIII, XXX, XXXV, XXXVII, XXXVIII, XLV, XLVI, LV, LVII, LVIII, LXX, LXXIII, LXXVI, LXXXIII, XCV, XCVII, CIV, CXV, CXXVII, CXXIX, CXXX, CXLII, CXLIV, CXLVII.

4. Nos. LII, LIV, LVI, CLI.

5. No. XCIV."

Coronation gulf and the Mackenzie delta are the same, but are uncertain for the eastern Eskimos. XXXIII and CXII are two rather doubtful cases where the eastern, Coronation gulf and Mackenzie delta regions seem to line together in opposition to Alaska.

Very little can be gathered from the twenty-five figures that are not known from anywhere outside of Coronation gulf. Two of them, XCVIII, and XCIX, are very intricate, and may have arisen in this area or farther east. Of the twenty-nine figures known from Coronation gulf westwards, but not reported from the eastern Eskimos, one notices that ten of them are reinterpreted in the gulf. Furthermore the chants that accompany so many of them in the west do not appear in Coronation gulf, which may be described as an altogether chantless region as far as string figures are concerned. Four figures are common to the Mackenzie delta, Coronation gulf and Hudson bay Eskimos, but are not known from any other region. Two of them have the same names in the Mackenzie delta and in Coronation gulf, but different names to the eastward; the third has different names in all three places, although there is a similarity between the interpretations among the Copper and eastern Eskimos; the fourth has the same name in all three places, but the two eastern ones agree in making only a simple form of the figure, whereas the Mackenzie delta form is more complicated. It is not improbable, in view of their absence from Alaska, that these four figures all originated among either the Copper or the eastern Eskimos, and spread west from them to the Mackenzie delta. The one

figure, XCIV, that has been found in the two eastern regions alone is also probably of eastern origin, for not only is it made in a very unusual way, but it has no definite significance in Coronation gulf, whereas the eastern natives give it quite a plausible interpretation.

It would appear from this distribution of the figures that the influence of the western Eskimos on the inhabitants of Coronation gulf was on the whole considerably greater than the influence of the eastern natives. In support of this view we may recall that the Copper Eskimos agree with the western natives in their taboo regarding the time for making string figures, and in their belief in a definite spirit of cat's cradles, although the latter superstition is far less prominent than in Alaska and may have been introduced in recent years.

On the other hand it must be remembered that there is a far larger collection of figures from the Mackenzie delta and from Alaska than from the eastern Eskimos, so that the resemblances between the two former regions and Coronation gulf are certain to appear disproportionately great. Furthermore, most of my Coronation gulf figures were collected at the western end of the gulf, where western rather than eastern influences might be expected to predominate. One striking difference between the string figures of Coronation gulf and those of the Mackenzie delta and Alaska is the total absence

of chants in the gulf area;(1) but whether this is the case also in Hudson bay and in Baffin island I do not know.

There are four figures (2) that seem to be absent from Coronation gulf, but are found among the eastern and the Mackenzie delta Eskimos. Two of them have identical meanings in both places, and the interpetation of the third seems to correspond very closely; the meaning of the fourth figure among the eastern Eskimos is uncertain. That there are four such gaps in Coronation gulf, where my collection is fairly exhaustive, would appear to favour a separate [191B] contact between the Mackenzie delta and Hudson bay natives, thus supporting the theory (3) that the Copper Eskimos are intrusive into the Coronation gulf region. However, no great weight can be attached to merely negative evidence.

It may be interesting to notice that the names or interpretations of the figures, like art patterns, are influenced by local conditions. Thus XIII was interpreted by the inland Eskimos of nothern Alaska as an old man dragging a bearded seal, whereas the

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"1. The Copper Eskimo chant in XXVII is almost certainly a fragment of a dance song.

2. Nos.III, XLVIII, XLIX, LXXXV.

3. D. Jenness, 'The Origin of the Copper Eskimos and their Copper Culture,' The Geographical Review, New York. XII, 4, Oct., 1923, pp. 540-551."

Mackenzie delta natives considered the animal a beluga. Bearded seals are not uncommon along the Alaskan coast, but are rare in the Mackenzie delta. The beluga, on the other hand, is particularly common in the delta, and the hunting of it in spring was as much a feature of native life as the hunting of the bowhead whale at Barrow. The very next figure, XIV, 'the reindeer dragging a sled,' could never have been so interpreted outside of Siberia, since there alone (until within the last few years) are reindeer used to drag a sled. XXXI must have received its name of 'beaver' in a region where that animal was known; in Coronation gulf and eastward, where the beaver does not exist, the figure bears a different name. Many other examples could be cited, but it is unnecessary to labour the point.

Many of the Eskimo figures here recorded will undoubtedly be found among the northern Indians of Canada and Alaska, Some, perhaps, were originally not Eskimo figures at all, but were borrowed from their Indian neighbours. The game is fairly popular among these Indians, but so far as I know none of their figures have as yet been published.

String figures have been recorded in large numbers from different parts of the world, particularly from Melanesia. It may be worth pointing out some of the differences between the Melanesian and Eskimo methods of manipulating the string. In both regions the majority of the figures begin with Opening A or Position 1. There are in addition a few abnormal openings, some of which are the same in both places; but what I have called

in this memoir Opening C, which occurs in at least twenty Eskimo figures, seems to be quite unknown in Melanesia. Again, very characteristic of Eskimo figures is the interchanging or combining of the loops on opposite thumbs or fingers, a movement that is rarely found in Melanesia. On the other hand Melanesian players seem often to use the middle fingers instead of the indices, whereas the Eskimos rarely use the middle fingers at all if the indices are available. Altogether foreign to the Eskimos, again, is that most characteristic feature of Melanesian figures, the 'Caroline Islands Extension,' with its outward position of the palms. There is very little difference as regards the complexity of the figures from the two regions, or their realistic interpretations, but it is comparatively rare to find in Melanesia a sequence of figures illustrating a narrative, whereas such sequences are very common among the Eskimos."

6: Roberts and Jenness--339-341 (1914-1916) 1925 Copper Eskimo
116, 533, 171

"DANCE SONGS FROM REGIONS SURROUNDING THE COPPER ESKIMOS

MACKENZIE RIVER DANCE SONGS

The Mackenzie river region lies to the west of that which the Copper Eskimos inhabit. It is not so far removed, however, that some intercourse should not occur. Twelve songs have been collected from this area, all of which are dance songs, and the first of which is designated an aton. The last is reputed to be a Russian song, and is exceedingly difficult and complicated, especially on account of the numerous chromatics, modulations and shifts in pitch due to what may be untrue singing. In the general conclusions its features have not been calculated.

No. 114 is not unlike some songs from the Copper Eskimos, except that it lacks refrains and connectives. The verses are all alike, with A and B phrases. The speed is moderate—M. M. 104. There is a syncopated rhythm and a tendency toward two sixteenth notes at the ends of the measures instead of an eighth, and sometimes for the second half of the second beat. The song begins on the final half of the fourth beat in a five-four measure which perhaps should be split into a three-four and a two-four.

Connectives are not lacking in all the songs from the Mackenzie, for in the test No. 115, one is used for an introduction and again to join the two almost identical halves of the song which are composed of two phrases each. The last part of each phrase is sung to burden syllables and between the A and B phrases called connective. Those which introduce the first half of the song and connect it with the second are different from those used by the Copper Eskimos in that they are longer and there are two words as well as some burden syllables. This song is much more lively in tempo than the average or even the fastest Copper Eskimo tune, for it moves at 144 M. M. Its dotted eighths and sixteenths beside lending precision of movement also add to the liveliness. There is an interesting rhythmic contrast in the beginning of the B phrase where a smoother movement of paired eighths appears.

Most of the Mackenzie river songs are much shorter than those of the Copper Eskimos and lack the divided verse with its refrain for each verse-part, the refrain and the connective. Many are similar to the final songs in each of the three Copper Eskimo sets, the pisik, aton and unclassified.

There is a flowing quality to the melody of No. 116 which reminds us of the weather incantations, and the octave intervals would be rare in the Coronation gulf neighbourhood. No. 117 is another short song with rapid tempo[sic] Its double dotted quarter notes and the triplet rhythms, as well as the series of sixteenths, especially at such

a speed, are features that are not at all characteristic or even common in the Copper Eskimo tunes. No. 118 is another very rapid tune which in plan is very like No. 66 among the atons of the Copper Eskimos. There is the same striving for the balance of parts which in the Mackenzie area seems to have been more often attained in compositions of this type. The large intervals and the rise of the curve of the melody in the middle of the song to exceptional heights mark No. 119, which does not display much evidence of design in its short length, but which is in its beginning very tuneful.[340]

Although the tempo of No. 120 is slow, the numerous sixteenths and thirty-second notes enliven the movement and distinguish it from the majority of Copper Eskimo dance songs of this general character. Some of those which are called to mind in connection with these Mackenzie songs are No. 50 with some very interesting instances of the singing of a single syllable over three notes, No. 54 which is a very old tune, Nos. 64 and 66, No. 67 which is another old song, Nos. 69 and 84, and No. 81 which comes from Prince Albert sound.

Although smaller rhythms are not very numerous in No. 121, the tempo and the greater melodic range provide Mackenzie features. If shows a nice balance in an exceptionally lovely melody. The syncopation is interesting and not at all typical of the region farther east. No. 122 has the same form as No. 121 and is quite Mackenzie in feeling. The rhythmic pattern is well developed and fairly consistent, and the melodic sequences again attest appreciation of the balance of parts.

No. 123 with its rapid movement and occasional triplet or eighth and sixteenth note rhythms, is only one phrase longer than the two previous examples, and like them, appears to be formless and wandering until one examines the music, when the charm of the melody is at once apparent.

Of the eleven songs analyzed seven are almost exuberantly major, one vacillates between major and the relative minor, one becomes irregular after a major beginning, one is minor and one is irregular throughout. The tonic seems on the whole better established here than in the songs we have so far discussed. Four songs begin on it, two end on it, although one ending is questionable, while seven appear to have it as the general level. In three of these cases, however, this seems divided, twice with the second degree and once with the fifth. Of the other songs, two begin on the fifth, one on the third and two on the second, but one is doubtful, while one begins on the third and another on the fifth of the minor scale. Other endings than those already mentioned for the tonic are in major tonality, two on the second degree, two on the third (one above and the other below the tonic), one on the fourth, one on the fifth, and one doubtful, while in the minor one ends on the third, the other on the fifth. General levels beside the tonic are, for the major songs, one doubtful for the fifth degree, and one not established; in the two minor songs one has the third, which served for beginning and end as well, the other is doubtfully the fifth, on which the song also opened and closed.

6: Roberts and Jenness--339-341 (1914-1916) 1925 Copper Eskimo-5
116, 533, 171

Five songs commence on the first beat of the measure, two on the last, two on the final half-beat and two on the second half of the next-to-the-last beat.

In summing up the situation for the Mackenzie river area, as far as the testimony of so small a group of songs permits, there are a number of particulars in which the music seems to be quite distinct from that of the Copper Eskimo. Melodically, in the dance tunes there is much more variety and grace, for the Copper Eskimo pisik forms give the impression of more or less monotony, with excessive play on the tonic major triad, while the form, if varied considerably in detail, is in its larger features and repetitions of parts at times rather tiresome. This does not mean that there are not a number of examples of very tuneful melodies and impelling rhythms which remain in the memory with tantalizing effect, for the Eskimos are, on the whole, exceedingly musical, in fact more so than is common with many Indian tribes or other peoples as groups. If the [341] dance songs of the Copper Eskimos show a larger percentage of sameness than is altogether agreeable when too many are heard at one time, the weather incantations reveal the great variety of musical effects of which their composers are capable, and rival easily the dance songs from the Mackenzie in loveliness of theme. After all, one would expect much monotony in music composed for a single purpose in such large quantities as the pisik, as our own jazz has long since shown, and the pisik is of sufficiently fixed character to demand a certain uniformity, while if Mackenzie specimens were more numerous their charm might pall somewhat.

The latter, however, seem never to have attained this formal structure, if the examples collected are representative; thus fancy is allowed freer play. They are short and therefore not as monotonous as would be the case if they were encumbered with numerous verse-parts, refrains and connectives. They are, nevertheless, far more melodious than necessity demands and this proves that their composers also are gifted with no mean musical imagination. The lively tempos of the majority of the tunes, the finer dotted and syncopated rhythms, are distinctively their own, or at least not shared to any extent with the Copper Eskimo songs, if they may be with those of other regions which will be examined after the Mackenzie examples have been studied in detail."

6: Roberts and Jenness--361 (1914-1916) 1925 Copper Eskimo
116, 533, 171

INLAND HUDSON BAY DANCE SONGS

The inland Hudson Bay Eskimos, as they have been called by the collector of the songs, live in the region southeast of the Copper Eskimos in the country stretching between Coronation gulf and Hudson bay. The collection of dance songs from this area is only seven in number, but perhaps there are sufficient to show what the music of this group is like and to reveal points of difference between it and that of the other regions."

6: Roberts and Jenness--362 (1914-1916) 1925 Copper Eskimo
116, 533, 171

"From this brief sketch of the songs of the Hudson Bay Eskimos, [AW: For detailed analysis of the Hudson Bay songs see p. 361.] we see that they have acquired the form of the pisik and even employ refrains and connectives, but in some cases in a very different fashion from the Copper Eskimos, while the rates of speed of all but one song equal or greatly exceed those of the dance songs of the latter people. There is one other outstanding contrast beside speed and that is the exceedingly poor melodic material. Not only are the songs uninteresting but they are very limited in tonal content. In several there seems to be a struggle for supremacy between two tones on adjacent degrees, either removed a whole or a half step. The song that with the exception of two notes is all on one tone, was collected among the Copper Eskimos but was transmitted from the inland Hudson Bay region, and if it was not originally so monotonous, may easily have impressed a Copper Eskimos [sic] with that quality. Nothing could be greater than the difference melodically and artistically, between these songs and those from the Mackenzie river, but the Mackenzie perhaps have not developed a complicated form like that of No. 129.

Three of the six songs analyzed are major in tonality, one is minor and two are irregular. Of those which appear to start with major tonality one begins on the third degree, another on the minor sixth, two on the tonic and one on the seventh. The endings, so far as they may be gathered from other parts, in unfinished songs, are on the third,

tonic, second and either second or fifth, but in all except the first and second songs are doubtful either because the songs are unfinished or irregular in tonality. The general levels in relation to the nearest major tonality for those songs that are irregular are the third, fifth, second and tonic. The minor song begins on the fifth and ends and has its general level on the upper tonic or octave. Four of the seven tunes commence on the first beat of the measure, and three on the last half-beat. In all but one case the metres are largely two-four, but one is nearly all in four-four metre."

15: Jenness--545-546 (No date) 1923 Copper Eskimo
116, 171

"An examination of the culture of the Copper Eskimos of today reveals one fact very clearly: their nearest affiliations are not with the Eskimos of the west but with those of the east and southeast. In material culture they so closely resemble the Netchilik Eskimos of King William Land and Boothia Peninsula that both must have the same historical background. Both groups, for example, use the same types of weapons for sealing, fishing, and caribou hunting; their household utensils have the same forms; and their dwellings, both snow huts and skin tents, are of the same shape and internal arrangement. Such differences as appear in the sled gear and in costume are of a minor character only, while the art patterns and the tattooing are the same in both places.

Customs, traditions, and religious beliefs also link the Copper Eskimos with eastern tribes rather than with western. The natives of the Coronation Gulf area frequently visited the Netchilik Eskimos and the Eskimos on the Thelon River; they knew of tribes as far east as Admiralty Inlet on Baffin Island and as far south as the Kazan River that runs north towards Chesterfield Inlet. Their geographical knowledge of the country to the west, on the other hand, was much more limited. Their travels in that direction rarely extended beyond Wise Point, which is barely outside the limits of their normal range; and only one name, Uwallinirmiut, was known for the western natives and for whatever subdivisions there might be among them. The mythology of the Copper Eskimos most closely resembles the mythology recorded from Hudson Bay. Both places

have the well-known Sedna myth, (3) which has not been found in the Mackenzie delta or in Alaska; moreover, the personal taboos so common in the two latter places are unknown in Coronation Gulf and eastward, where much more emphasis is laid on the distinction between sea products and land products. We may cite also the evidence of burial customs. In Coronation Gulf, as in [546] the east, the dead are simply laid out on the surface of the ground, unprotected, but with replicas of their clothing and miniature implements placed beside them; in the west no such miniature articles have been found in the graves, which were always covered with stones or logs of wood.

Finally the linguistic evidence definitely links the Coronation Gulf area with a central group that includes northeastern Hudson Bay from the Kazan River in the south to the Netchilik Eskimos of Boothia Peninsula. Some of the specific marks of the dialects in this region, as distinguished from the dialect of the Mackenzie delta area, are:

1. The use of n and ng instead of t in many terminations.
2. A preference for the poq and voq conjugation endings, whereas these are generally replaced in the Mackenzie area by toq and yoq.

"3. See Franz Boas: The Eskimo of Baffin Land and Hudson Bay, Bull. Amer. Museum of Nat. Hist., Vol. 15, 1907, pp. 1-570; reference on pp. 163-165."

3. The spirantizing of s to ch (of German ich), with a tendency for it to become a pure breathing in initial positions.
4. The appearance of voiceless l (this is less certain).
5. Frequent substitution of conjunctive mood for indicative."

29 together again. Heel crimping was naturally confined almost entirely to the more decorative shoes. When not crimped, this type usually had one seam up the middle of the heel, whereas the plainer type frequently had two and even three.

294 A casing of sealskin (more rarely, caribou skin), undressed, and sometimes 281 not even dehaired, was sewn round the top of the shoe to hold a cord of plaited 291 sinew (*singiq*) that emerged through two holes at the back and tied in a bow over the instep. Two large patches of sealskin, dehaired but undressed, covered the whole or almost the whole of the sole, giving it double thickness; and whenever a hole wore in either patch, another was promptly superimposed on it. These patches had to be sewn on with concealed stitches that caught only the under surface, because the thread would quickly fray and break if it penetrated [481] to the outside. Natives who anticipated considerable walking on glare ice or very hard, firmly packed snow sometimes added also narrow, meandering patches —"creepers"—to give them securer foothold (Figure 10c).

[114] In the autumn of 1915, when the party with which I was travelling was still hunting inland, an Eskimo induced his wife to make him a pair of caribou- [122] fur overshoes and to reinforce them with extra soles of sealskin. From another native I obtained a similar pair of caribou-fur overshoes that bore outer soles [177] of dehaired caribou skin, and, over the outer soles, patches of sealskin. These were probably copied from the shoes of the inland Eskimo to the southeast, where they were invariably made from caribou fur, as the Copper Eskimo well knew. Around Coronation Gulf they were regarded with disfavour for ordinary use, because, although warmer, they readily soaked up the damp from the half-thawing floor of the snow-hut and immediately shed their fur. They were more practicable among the inland Eskimo, whose snow-huts were not so warm, because, lacking seal oil, they burned caribou fat in their lamps, which served in the main for lighting only.

[171]

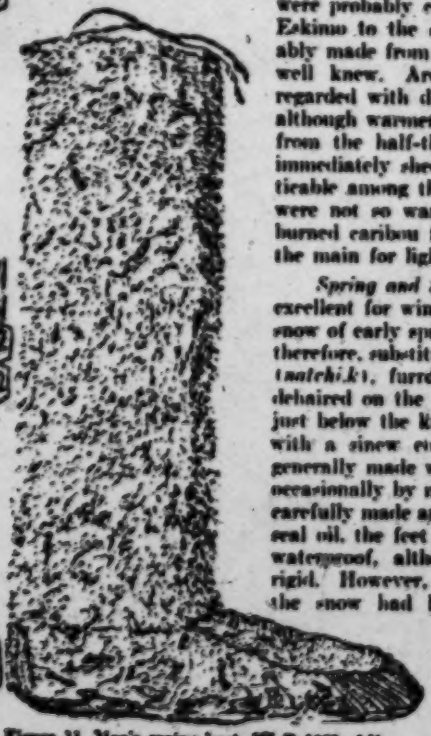

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Figure 11. Man's spring boot. IV.D.1029. 1/4.

Spring and Summer Boots. Sealskin shoes were excellent for winter wear, but against the soft deep snow of early spring quite inadequate. The Eskimo, therefore, substituted for them long boots of sealskin (*natchik*), furred on the outside of the legs but dehaired on the feet (Figure 11). They reached to just below the knees, and were there tightly bound with a sinew cord that passed through a casing, generally made with an extra band of sealskin, but occasionally by merely sewing down the edge. When carefully made and saturated from time to time with seal oil, the feet of these boots were soft but quite waterproof, although the uppers were somewhat rigid. However, toward the end of spring, when the snow had largely melted, the streams were running, and pools of water lay everywhere, the Eskimo changed to their real waterboots (*iperautik*) (Figure 12), which were similar in shape, but dehaired throughout their entire

women's. Figure 20 shows a rather unusual type of dancing cap, made entirely from sealskin. Most were of short-haired caribou fur, decorated with parallel white bands, or with bands in white, red, and black exactly like outer stockings; many lacked even the fur base, the parallel bands forming the entire body of the cap. Here and there were attached clusters of creamy caribou-skin thongs, and to the crown a white weasel skin that trailed down behind (Figure 21). Inset in most caps, too, from one side to the other over the peak, was the head and neck of a loon, so split that the bill projected upward. Figure 22 shows a typical specimen.

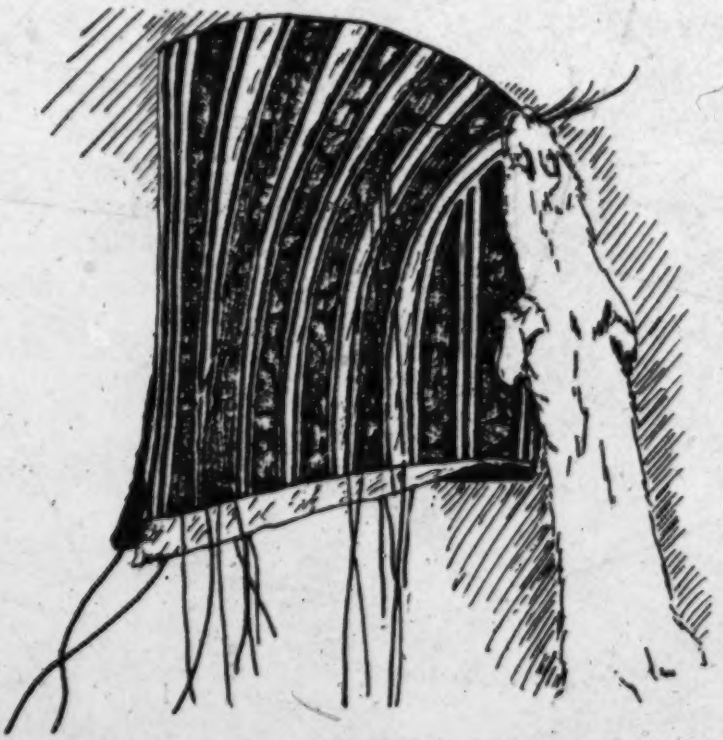

Figure 21. Dancing cap, of caribou fur, with lemming-skin pendant. IV.D.976. Approx. 1/2.

This loon-head ornament probably originated from the use of a complete loon-skin head-dress, such as was current on the Arctic coast of Alaska down to the second half of the nineteenth century.[1] I have never seen a specimen, but

[1] Cf. Simpson, John: The Western Esquimaux, a collection of papers on Arctic Geography and Ethnology published and presented to the Arctic Expedition of 1875, p. 388, London, 1875.

[TEXT CONTINUED ON PAGE 31]

354 solely for illuminating purposes. For this, small specimens may suffice. But a
[511] surplus of light and heat is inevitably connected with the Eskimo idea of luxury;
[191] therefore big lamps are also found in such regions. Conversely, small and rudely made lamps for burning blubber oil are found also in the regions of the Far North.

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a

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b

Figure 47. Fire-lighting apparatus; a: sealskin tinder-bag containing eriophorum seeds, IV.D.728, 1/1; b: moss-root torch, IV.D.327, 1/2.

354
191 The reason for this may either be lack of material, or these lamps may be intended for some particular purpose—for use on journeys or for illuminating the entrance or corners inside the house."

Hough again, in his well-known memoir,[1] distinguishes three kinds of Eskimo lamps on the basis of their use, viz. the house lamp, the travelling or summer lamp, and the mortuary lamp, the latter frequently being models. 354 171

372 237 824 415

Figure 48. Bag for dry grass, made from the lining around an animal's heart. IV.D.[illegible]. 1/1.

Neither of these statements is quite correct when applied to the Copper Eskimo. They had lamps of every size, from 2 or 3 inches long up to 50 inches; and small vessels 8 or 12 inches long were as common as lamps of 30 inches. From June to September or October, when most of the snow had melted from the land and the families were scattered in search of fish and caribou, the natives generally cached their lamps with the sleds on the seashore or on the margins of lakes, and used for fuel dwarf willow, heather, *Dryas integrifolia*, and other plants, instead of blubber. Consequently, they had no special summer lamp. But because their ordinary lamp seldom functioned during the summer months we cannot say with Porsild that it had lost its importance as a heater. It still remained the indispensable prerequisite of existence during two-thirds of the year for heat as well as for light. 354 221 [114] [132] [824] [137] [113]

[1] Hough, Walter: Ann. Rept. Smith. Inst., U.S. Nat. Mus., [illegible], p. [illegible].

One (Figure 56), 15 1/4 inches long by 8 1/2 inches wide, has been fashioned from a basic igneous rock that seems to be gabbro; the other (IV.D.69), 12 inches long by 7¼ inches wide, from an impure red sandstone. These two lamps greatly resemble some from Hudson Bay, and probably came from that direction; for although the Victoria Islanders commonly obtained their lamps from Coronation Gulf, they sometimes travelled south by way of Bathurst Inlet and traded with Eskimo in the vicinity of Back River.

Figure 56. Lamp made from igneous rock. IV.D.67. 1/3.

In the snow-hut the lamp rested directly on two stout sticks laid parallel with one another behind the table. Care was taken to render it perfectly horizontal, or with a slight tilt forward, as a backward tilt prevented the oil from flowing to the wick. On one side both table and sticks were supported by an L-shaped board or strut (Figure 57) of which the long arm was driven into the snow wall near the door, and the short arm rested on the floor or was raised to the proper angle on a block of snow; on the other side, they were pushed into the side wall of the hut. Thus, both lamp and table paralleled the front edge of the sleeping platform, leaving a gap just wide enough for the housewife to slide into her seat.

Figure 57. Strut for supporting table. IV.D.660. Approx. 1/12.

Occasionally a family lacked a proper strut to support the lamp and supplied its place with snow blocks. In the spring tent, too, the sticks and boards naturally rested on snow blocks because there was no snow wall to support them. In the late spring and throughout the summer, when most of the household furniture had been stored in caches and the Eskimo were moving over the land,

two or three stones supported the lamp; and on short winter journeys, when the lamp served only for light, it was simply placed on a block of snow. As already stated, it was seldom employed during the summer months.

Unlike nearly all Eskimo tribes the Copper Eskimo seldom or never used moss for the lamp-wick, but substituted the seeds of the cottongrass, *Eriophorum angustifolium*, or, more rarely, the catkins of the dwarf willow, either of which gave a more smokeless flame. *Eriophorum angustifolium* matures about the beginning of September, and it was at that season the women gathered the seeds into small bags made of loon skin, marmot skin, or other convenient material. They gathered a large supply, as in midwinter the wick needed daily renewing; and they deferred the separation of the seeds from the stalks until leisure moments in camp.

Lighting and Tending the Lamp. The Copper Eskimo lighted and tended their lamps in the same way as the Eskimo of Smith Sound[1] except that they did not chew the blubber and spit it into the lamp. The housewife took out of a sealskin poke two or three strips of blubber a foot or more long by several inches wide, and with a specially designed hammer of musk-ox horn (*See* Figure 63) pounded them on the table to break up the cells.[2] She then laid them in the well of the lamp, when a little oil began at once to accumulate on the bottom, unless the weather was extremely cold. In this oil she soaked her eriophorum seeds, and arranged them along the lip of the lamp in a continuous line so that their lower edges touched the bottom of the well (or at least dipped into the oil that shortly accumulated), and the upper edges projected about a quarter of an inch above the rim. To light the wick she pinched it up into little points 2 or 3 inches apart, which readily caught fire from the torch; and by patting up adjacent parts of the wick with her lamp-trimmer she quickly produced a continuous smokeless flame rising to a height of about three-quarters of an inch. As the heat melted the oil out of the strips of blubber, she removed them to the back shelf of the lamp until they drained; then, later, she threw them to the dogs. Sometimes, if the lamp already contained a certain quantity of oil, she placed fresh strips of pounded blubber on the same shelf instead of in the well, so that the oil would not accumulate too rapidly and drip over the outer edges of the lamp. The Copper Eskimo had no device for melting the blubber on a stick or shelf, such as was common in both the eastern and western Arctic.

Hough[3] says that lamp-trimming "only reached perfection in the old women of the tribe, who can prepare a lamp so that it will give a good, steady flame for several hours, while usually half an hour is the best that can be expected." This is not true of the Copper Eskimo. There, the women naturally have more experience than the men, and on the average are more skilful, but many a hunter can tend the wick just as successfully as his wife. A lamp is seldom allowed to smoke; one of the inmates, be it the man, his wife, or even one of the children, is sure to notice it and pat down the wick.

The same writer states in another passage[4] that "the lamp and the pot usually agree as to size, the rule being that the length of the pot shall be equal to the length of the wick edge." Among the Copper Eskimo, as in Smith Sound and, I believe, elsewhere, the sizes of the two vessels bear no direct relation to one another. For obvious reasons the wick edge of the lamp should be no shorter than the bottom of the pot; but it may be, and often is, much longer, for with her lamp-trimmer the housewife can readily adjust the flame to whatever length she desires.

[1] Cf. Sverdrup, H. F.: Contributions to the Ethnology and Anthropology of the Polar Eskimos. Meddelelser om Grønland, vol. XXXIV, p. 339 f.

[2] Polar bear fat was occasionally used instead of seal blubber, and probably fat of any kind in emergencies.

[3] Hough: op. cit., p. 1054.

[4] Hough: op. cit., p. 1057.

The lamp-trimmer mentioned several times above was in most cases merely a pencil of wood varying in length from 6 to 18 inches, generally flattened at one end and smoothed. Any small stick, whether of wood, bone, or antler, sufficed in an emergency; I have even seen a man use his knife. The stone (soapstone or asbestos) pencils, often employed in West Greenland and in Hudson Bay,[1] seem to have been unknown to the Copper Eskimo. Unknown, too, were the drip-stands of Alaska, Greenland, and other places. The Coronation Gulf soapstone is not porous as the Greenland soapstone is said to be[2]; and though oil might frequently drip over the edges, it never seeped through the vessel itself. 354 412 [135]

Every household employed torches for lighting extra lamps, for searching the corners of the hut, and particularly for conveying fire from one snow-hut to another. Occasionally a woman used the lamp-stick or even raw lamp-wick, but she always kept for the purpose four or five bunches of matted moss roots that she had collected and dried in the late summer (Figure 47b). Such a torch, dipped in the melted blubber, would burn several minutes, though if carried outside in windy weather it had to be shielded inside a bag or bucket. It was a common sight after a day's march to see the women carrying torches from one hut to another in order to relight their lamps; the first lamp, of course, was lighted with pyrites. 416 [824]

In summer, when the lamp was discarded, the Eskimo carefully extinguished their open-air fires with flat stones in order to reduce the burning wood to charcoal, which readily took a spark on some future occasion and could be kindled into a flame with the breath. In blowing the fire they did not purse their lips as we do, but curled the tongue along the lower palate into a half-cylinder that directed the breath along a narrow path. When carrying glowing coals from one tent or cooking place to another the women usually wrapped them in bunches of dry heather or *Dryas integrifolia;* where no coals were available they used the heather or dryas alone. 372 [824] [137]

POTS

The Back River Eskimo commonly made their cooking pot from five flat slabs of limestone cemented together.[3] Among the Copper Eskimo we saw none of this type, only pots carved from solid slabs of soapstone. Theoretically these pots should have received two forms, one adapted for cooking over the blubber lamp in winter and the other for use over an open fire during the summer months. The pot for use with the blubber lamp should have been a long, oblong vessel, rather narrow, because the flame of the lamp was a long, narrow line; it should have been comparatively deep to hold large pieces of seal and caribou meat; and it might have had considerable dimensions and weight, as it was always carried on the sled during the winter and spring months. The pot for use over an open fire in summer should have been less narrow, and altogether smaller and lighter, because at that season all the household furniture had to be carried on the back. 415 [171] [324] [252] [493] [482]

In actual fact both types existed among the Copper Eskimo, but the longer, narrower form adapted for use over the blubber lamp was far more generally used, as winter conditions prevailed during 8 months of the year. The pot was nearly always rectangular in outline, though one saw occasional specimens of trapezoid form. The corners were sharp, almost at right angles, the sides slightly convex in outline and sloping inward towards the bottom, making the vessel widest and longest at the top; the convexity in the sides was occasionally marked. In large pots there was a tendency for the depth to vary inversely with the breadth, so that the narrower vessels were likewise the deepest.

[1] Porsild, M.: Op. cit., p. 231. Thalbitzer, W.: The Ammassalik Eskimo; Meddelelser om Grønland, vol. XXXIX, p. [illegible] (Copenhagen, [illegible]). 113

[2] Birket-Smith, K.: Ethnography of Egedesminde District; Meddelelser om Grønland, vol. LXVI, p. [illegible] (Copenhagen, [illegible]).

[3] Chief Factor James Anderson's Back River Journal of [illegible]; Can. Field-Nat., vol. LV, 2, [illegible], p. [illegible].

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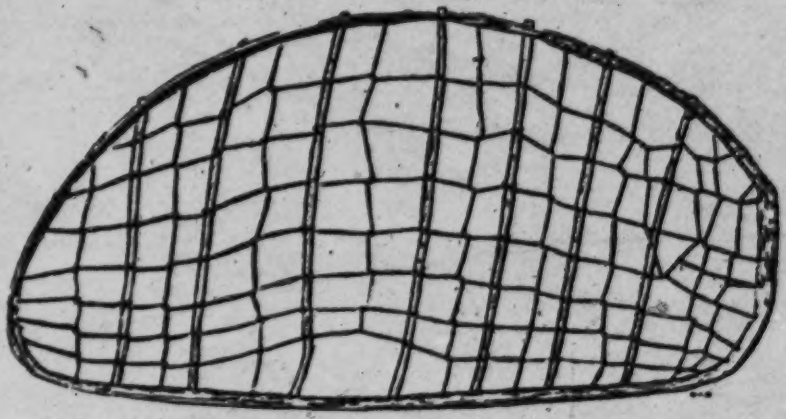

Figure 62. Drying frame. IV.D.647. Approx. 1/14.

BLUBBER POUNDERS

Although a stone or any convenient implement might be used in an emergency to pound the blubber for the lamp, every household possessed at least one, and often two or three implements especially made for this purpose. It was invariably of musk-ox horn, curved evenly almost to a semicircle. The handle was flattened on the sides, and had three or, more usually, four grooves on the under surface to fit the fingers; rarely it ended in a small knob. In size it varied from children's toys 2 or 3 inches long to specimens of 11 inches; the average household size was around 8 inches (Figure 63). Ornamentation was rare, but one specimen in the possession of the Museum (IV. D 1611) has etched into its surface the ring-and-dot design and three parallel lines.

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These Copper Eskimo blubber pounders of musk-ox horn differ slightly from the Netchilik specimen figured by Boas.[1] The latter have for the first finger a deep notch that seems to form almost a right angle, sharply dividing the hammer end from the handle. All the Copper Eskimo specimens that I have seen bear rounded grooves only, so that their form is much more graceful. Blubber pounders were used in west and northwest Greenland,[2] and probably also both in Mackenzie delta and in Alaska. The typical West

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Figure 63. Blubber pounders, of musk-ox horn, the smallest a toy only. IV.D.150, 425, 1602. Approx. 3/8.

[1] Boas, F.: Eskimo of Baffin Island and Hudson Bay; Anth. Papers, Am. Mus. Nat. Hist., vol. XV, 1907, p. 402.
[2] Thalbitzer, William: Meddelelser om Grønland, vol. 39, p. 355.

321 Greenland implement seems to have been made of antler, the heavy base at right
412 angles to the prong forming the hammer head.[1] For Mackenzie delta and Alaska
372 our information is less certain, but some bone-headed mallets figured by
171 Murdoch,[2] were probably used for pounding blubber; they are mounted on wooden handles like the ordinary stone-headed mallet from this region. The Museum possesses a stone mallet (IX.F.323), unmounted, from Barrow that was said to have been used for pounding blubber.

321 The blubber pounder made of musk-ox horn is evidently a special product
412 of the central regions, where alone, except for the uninhabited northern archi-
372 pelago and North Greenland, the musk-ox has persisted down to the present
174 day. The convenient shape and weight of the natural horn doubtless suggested
[171] its use for this purpose; and the grooving of the handle for the fingers was already practised with certain other tools, such as the marline-spike for the back-lashings of the bow.

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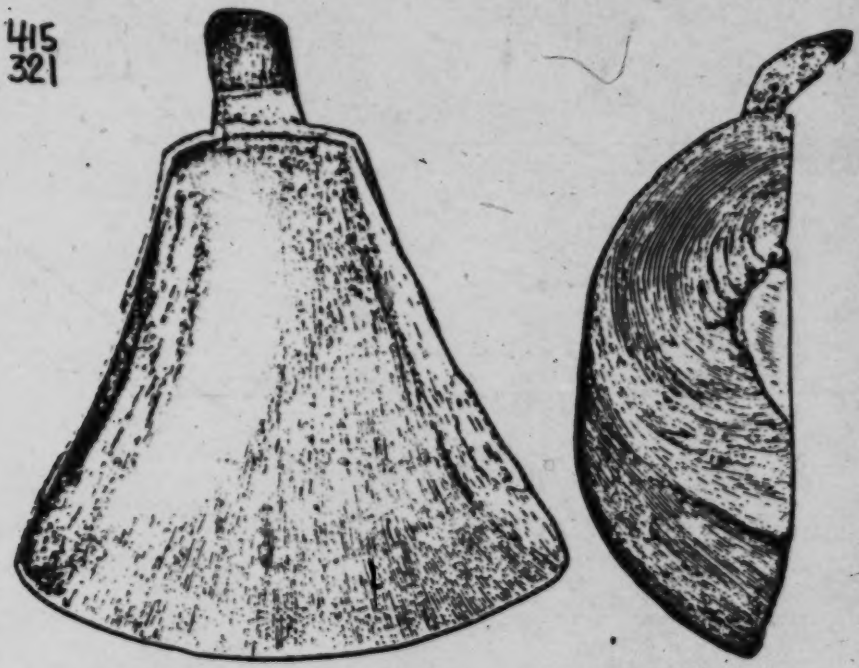

Figure 64. Drinking ladle, of musk-ox horn. IV.D.1459. Approx. 1/2.

LADLES AND DRINKING HORNS

Drinking ladles of musk-ox horn were indispensable to every household, but never carried by hunters in the field. Their usual shape is illustrated in Figure 64. In size they varied from children's toys 4 or 5 cm. long (often made of

[113]

[1] Birket-Smith, Kaj.: Ethnography of the Egedesminde District; Medd. om. Grøn., vol. LXVI, fig. 14.
[2] Murdoch, John: Ninth Annual Report of the Bureau of American Ethnology; Smith. Inst., pp. [illegible].

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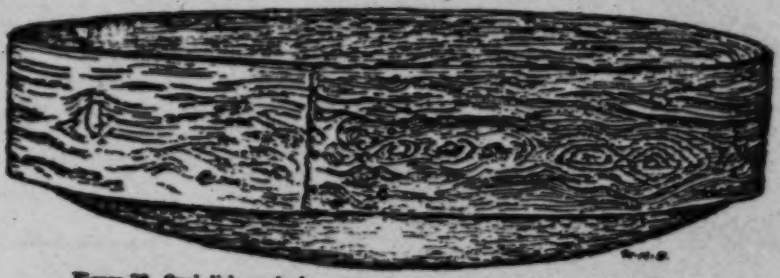

Figure 72. Oval dish, made from two pieces of wood. IV.D.625. Approx. 1/4.

Figure 73. Dish hollowed from one piece of wood. IV.D.830. 1/4.

WATER BUCKETS

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281 The bucket for carrying water (Figure 74) was made from tanned sealskin, and fitted with a strap handle of the same material. Its usual capacity was slightly over a gallon. The vessel lasted much longer than might have been expected, because holes and small rents could be quickly patched without impairing its tightness. As with our canvas buckets, ice that formed on the inside was broken loose by hammering on the outside with a stick.

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[171] When travelling in winter, a few Eskimos carried on the back, under the clothing, a cylindrical water bottle (Figure 75) made from the gullet of a seal. The stopper was a wooden plug lashed inside the mouth of the bottle. Similar "thermos" bottles were known in the eastern Arctic also.

Figure 74. Water bucket, of sealskin. IV.D.816. 1/4.

MEAT FORKS

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321 Meat forks, used for testing and removing the meat from the pot, but not for eating, were made of bone or musk-ox horn, more rarely of antler. Most were slender, tapering pencils, slightly curved, ranging in length from about 7

SNOW KNIVES OF ANTLER AND BONE

412 32 [192] To chop up the blocks of snow in the cooking pot, women frequently used a knife of antler, more rarely of bone, known as *havayaq*, a light, roughly made tool, two specimens of which are shown in Figure 78. Many women, however, simply used the curved knife or *ulo* for this purpose.

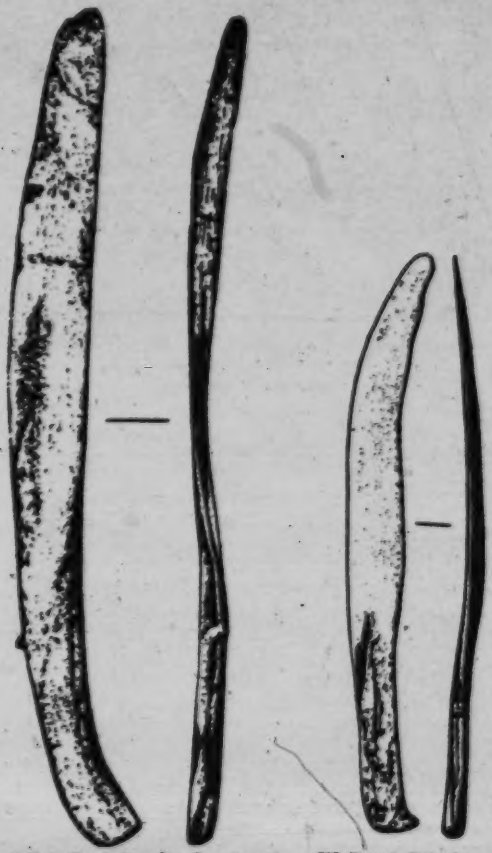

Figure 78. Antler knives for chopping snow. IV.D.188, 278. Approx. 1/2.

[171] These antler knives are identical with those used in the Hudson Bay area for scraping ice from kayaks, but the Copper Eskimo had little or no occasion [462] to employ them for this purpose. A woman sometimes used one to chop snow [342] for filling in gaps between the snow blocks while her husband completed the building of a hut, but even this was unusual.

The method of using the whittling knife in Coronation Gulf and westward differed from the Greenland method described by Porsild.[1] The Copper Eskimo held the knife low down with the hand directed inward, and the handle resting along the inner side of the forearm so that it fitted into the curve of the elbow. With the instrument thus pivoted on the elbow the forearm moved as one unit and the wrist remained perfectly still. Smaller whittling knives, even though their handles did not reach the elbow, were held in the same manner.

Grooving Tool. The Copper Eskimo had a tool for cutting grooves in bone, antler, and horn similar in shape to the tool used by other Eskimo tribes. The blade, which was nicked at the end or else bore a sharp, pointed projection, was mounted in an antler handle of no particular shape. Sometimes the handle was split for the insertion of the blade, sometimes the blade was simply driven in with a stone, and riveted or not according to the owner's fancy. Figure 115 shows three specimens of the tool, all from Coronation Gulf; but Figure 115c is really a combination tool, because its handle served also as an arrow straightener. All three specimens have iron blades, as indeed did every grooving tool I saw in the country. Whether copper or stone preceded iron in this case I did not discover.

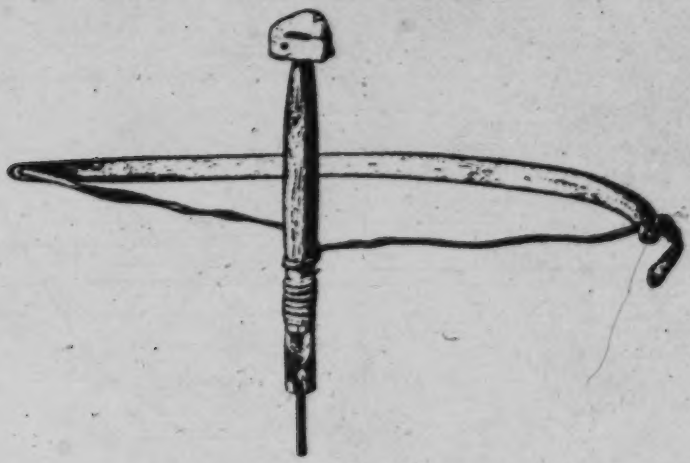

Figure 116. Drilling set. IV.D.708. 1/3.

Drilling Sets. The Copper Eskimo used the three-piece drilling set found among other Eskimo tribes (Figure 116). The bow was of bone, generally the rib of a musk-ox or caribou; a hole was drilled in each end for the attachment of the sealskin cord. The stem or spindle was nearly always of wood, though bone was used occasionally and ivory when it was procurable. To prevent the wood from splitting, a bead of bone, antler, or musk-ox horn was added to it, either as a cap or by splicing. All the drills I saw had points of iron, which had long been current in very small quantities; copper perhaps was used earlier, and stone, although the natives seemed to have no recollection of the stone drill points.

[1] Porsild, M. P.: Studies on the Material Culture of the Eskimo in West Greenland; Meddelelser om Grønland, vol. LI, p. 166.

412 Figure 119*d* shows a similar specimen with a heavy steel chisel for a blade.
325 Here, both the upper and lower surfaces of the lashing have been protected with
284 sealskin, and the antler handle has only one large hole.

Figure 119*a* has a steel blade (part of a file) driven into a head of musk-ox horn; the end was wrapped in sealskin to wedge it securely in the socket. Five holes are drilled in the horn head, two in the handle to receive the lashing, which, as always, is of sealskin.

Figure 119*c*, which also has a steel blade, is mounted in a bone head without wedging. The head is not drilled for the lashing, but has a wide groove that answers the same purpose. The antler handle has only one large hole.

412 *Mattocks.* Mattocks or picks of heavy bone or antler, mounted on handles
321 like adzes, occur only as relics of the earlier whale-hunting population. Numerous
172 specimens were noted in the ruins at Cape Kellett, on Banks Island, and one of whale rib, much weathered, was found without its handle near Forsyth Bay on Victoria Island (Figure 120). The local natives guessed its purpose correctly, though they had never seen one in use. In pattern it is identical with the
[171] mattocks I dug up at Barter Island, in northern Alaska, and with specimens from the "Thule" culture remains in Hudson Bay region.

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Figure 120. Old mattock of whale rib, found on Victoria Island. IV.D.237. 1/3.

Figure 121. Mattock or pick of antler, IV.D.225. 1/4.

The typical mattock of the Copper Eskimo was simply an unmounted caribou antler with sharpened point, butt crudely shaped to give a grip, and, rarely, a projecting foot as on the handle of the man's knife (Figure 121). Any large antler, curved or straight, served the purpose, and some specimens were

412 414 321 about 6 inches long that tapered to rather blunt points, and had rounded or conical knobs at their heads so that they could be fastened together in pairs, either tied with sinew or, more often, pushed through holes in a small strip of sealskin. If knobs were lacking, small holes were drilled for tying them together (Figure 167).

412 414 32 224 [415] *Bone Pins* (for the blood bag). The hunter generally collected the blood of the caribou in the reticulum of the stomach, which is shaped like a pouch. To close this pouch he carried in his tool bag two or three thin round pins of bone, rarely of wood, that ranged in length from 2½ inches to nearly a foot. The points were usually rather sharp so that they would penetrate the reticulum without tearing a large hole; and the heads were shaped in various ways, so that many blood pins were indistinguishable from the needles used to lace together the front of a tent (Figure 168). Some were quite plain, others had small knobs or were bevelled off like a marrow spatula; but a favourite form had two or even three projecting points, which were useful for keeping the mouth of the bag open when pouring the blood into it. Many hunters fastened their pins in pairs, like the meat skewers, the twisters, and the marline-spikes. A man who had no pins, tied inside the mouth of the blood bag a wooden plug such as is shown in Figure 169.

Figure 167. Bone skewers for pinning up a caribou carcass. IV.D.490, 1338. 1/2.

411 [531] [971] *Wrist Guard.* Archer's wrist guards (Figure 170) seemed to be universally of bone, and never to vary from an oval outline. The fine carving and engraving that appears on wrist guards east and west of this area was unknown to the Copper Eskimo, where one specimen was typical of all.

415 237 *Drinking Tube.* The drinking tube, though normally carried by the hunter only, was used by his entire family when travelling overland in summer with all its possessions. It was simply the hollow leg bone of some bird, usually a swan, not ornamented or marked by any special features. Many were indistinguishable from the needle-cases often found in the same tool bag (Figure 171).

its owner streamed water over the mud to produce the thin coating of ice that reduced friction to a minimum.[1] By the end of April, however, it required protection from the growing warmth; the Eskimo, therefore, draped the sunward sides of their sleds with skins when in motion, and piled snow over the runners when at rest. In May even this protection failed them; gradually the mud melted and fell away.

The tops and bottoms of the runners were roughly parallel except in front, where the bottoms curved upward like a ski. Spaced about a foot apart were the flat crossbars, each lashed down at the ends with a rawhide thong that passed two or three times over the bar and a corresponding number of times through a hole in the runner below. To the front crossbar was attached also the toggle that bore the strain of the traces, a "new-moon-shaped" object of musk-ox horn, slotted in the middle and suspended between the runners by means of a belt of stout rawhide, preferably from the skin of the bearded seal (Figure 177); each end of the belt passed from the inside through a special hole in the runner below the front crossbar and then "button-holed" over the projecting end of that bar. There seemed to be no variation in the shape of this sled toggle, nor did I see any that were not made of musk-ox horn, which indicates that the animals were comparatively numerous a few years ago within the territory of the Copper Eskimo.

Figure 177. Sled toggle, of musk-ox horn. IV.D.191. Approx. 1/4.

In the late spring and early summer, when a sled was difficult to drag over the numerous patches of bare ground, the Copper Eskimo commonly substituted the skin of a seal or polar bear, which glided with much less friction over soil and stones. In the autumn, again, before recovering the sleds they had abandoned late in the spring, they sometimes fashioned runners from skins, which they held in shape with fillings of willow branches and ice, and equipped with crossbars in the usual manner. On one occasion a native even used a block of ice for a sled; he merely rounded the bottom a little and grooved the front end for the attachment of his trace.

Two Eskimo who travelled from Backs River to our station in the winter of 1915-16 dragged sleds that were longer, narrower, and with lower runners than any I saw among the Copper Eskimo, but in all other respects seemed identical. One of them had a square sail of dehaired caribou hide mounted near the front to take advantage of the favourable wind; this, of course, was not an aboriginal invention, but reflected the influence of Europeans.

Sleds rarely carried any ornamentation. We observed only two instances, both of which consisted of a simple Y pattern painted in red and black on the sides of the runners where they began to turn upward.

Harness. Like other Eskimo previous to European contact, the natives around Coronation Gulf hitched their dogs to the sled fanwise, with individual

[1] See Reports of the Can. Arct. Exped., vol. XII, pp. 116, 118. The Copper Eskimo never mixed blood with the water, or used blood alone, as was commonly done by their counterparts farther to the east.

501 in most districts he used it so seldom that he either disposed of it after a year
[422] or two, or else broke up its frame and employed its wood and skin for other purposes. At the time of our visit not one man in ten owned a kayak, or even the frame of one. Around Dolphin and Union Strait I saw only two kayaks, one of them owned by a Victoria Island native, but they became progressively more numerous as one travelled east to Bathurst Inlet. They kept the same shape everywhere, although they differed in length; and the frame was invariably
501 of spruce wood, the covering of sealskin. Generally they were longer, and, in
•171 proportion to their length, narrower than kayaks to the westward. They lacked, also, attachments for a sealing harpoon or bird spear, and their bows and sterns had neither eyelets nor projecting horns to facilitate their transport on sleds. In Mackenzie Delta nearly every kayak bore an upstanding horn at each end, and along the Arctic coast of Alaska as far as Barrow, if not beyond, it was usual to have an eyelet in the bow and a horizontally projecting horn in the stern. Below are the measurements of five kayaks, two from Arctic Alaska, two from Mackenzie Delta, and one from Victoria Island within the territory of the Copper Eskimo.

—	Arctic Alaska		Mackenzie Delta		Victoria Island
	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
Total length	15	13 3	15 8	15 10	21 7
Greatest breadth	1 6	1 6	1 7½	1 6	1 3½
Distance of opening from stern	6 5	5 8	7	7	8 6
Depth of opening in front	1	1	11	1 2	1 2½
Depth of opening behind	9½	9	6½	8	7
Diameter of opening	1 4 by 1 6½	1 11 by 1 3½	1 4½ by 1 6	1 6 by 1 6	1 6

501 In Copper Eskimo kayaks, bows and sterns were practically straight and the deck level, except just forward of the opening for the paddler, where the front of the gunwale, as usual, was raised by an angular arch. This gunwale was formed by two circular hoops of wood that bound the skin covering between them and were tightly lashed together with sealskin thongs through holes near their rims. Lashed to the deck a few inches in front of the hole was the paddle
[321] rest (Figure 181), an L-shaped piece of bone with the upstanding "horn" tilted slightly backward; by resting the middle of his double-bladed paddle against this horn, the hunter obtained greater leverage. I saw no other attachment to a kayak, and was told that the hunter who carried a lance merely pushed its
[126] butt under the lashings of the paddle rest. From Capt. J. Bernard, however, I
[237] obtained the curious baleen object illustrated in Figure 182, which he stated had been used in some way on a Coronation Gulf kayak. Possibly it supported the skin deck, its two triangles fitting on the gunwales; or it may have been fastened on the deck and lances thrust through the triangles.

501 Figure 180 shows the wooden paddle of the kayak illustrated in the same
321 drawing. It is 11 feet long, ridged at each grip, and edged with bone on the two
321 blades. The bone is grooved to fit over the wood and secured with antler rivets
322 that in three places have fallen out and have been replaced by iron nails. Over each of the two ridges is a sealskin ring three-quarters of an inch in diameter, made by coiling a thong of sealskin around a base of the same material; it kept
501 the water from dripping down the blade onto the paddler's hand. Having seen in the Coronation Gulf area only two other paddles, which I did not examine

ART

In the field of art the Copper Eskimo accomplished far less than their kinsmen in the eastern and western Arctic, not because they lacked the same gifts, but rather because they failed to develop them. In the decoration of their clothing they displayed a feeling for line and colour, a sense of balance and harmonious composition not surpassed by any other Eskimo group. They demanded symmetry in everything. The insertions on their coats, trousers, and stockings, and the arrangement of the lemming skin pendants, all were governed by this passion for symmetry. Thus, a woman who was sewing two pairs of caribou ears to the shoulders of her coat spaced them at even distances, with the larger pair on the outside and the smaller pair within at a slightly lower level. Symmetry governed also the shapes of many implements. No Eskimo group made trimmer tools and weapons, toggles, and buckles; and the splicing of wood, especially of arrow shafts, was amazingly accurate.

One may believe, therefore, that they possessed in full measure the artistic talents of other Eskimo, but that fashion kept these talents latent. They could have produced the delicate carvings and engravings in bone and ivory that we find in Alaska, and, to a lesser extent, in the eastern Arctic, but the impulse was lacking. They did, it is true, engrave a few simple designs, and make a few rough carvings, mainly for fishing lines and needle-cases; but the "picture-writing" of the western Eskimo, and the naturalistic shapes given to toggles, drum handles, and many other objects were conspicuously absent.

Weaving, except the finger braiding of sinew for sealing lines, was an unknown art, and painting almost equally unknown. The runners of two sleds bore a series of Y designs painted in red and black on their fore ends; otherwise, paint served only to colour skin. Needle-cases and bow-case handles usually bore engraved lines, but other objects only occasionally. The principal designs are shown in Figure 187. The ring-and-dot pattern was not very common, and

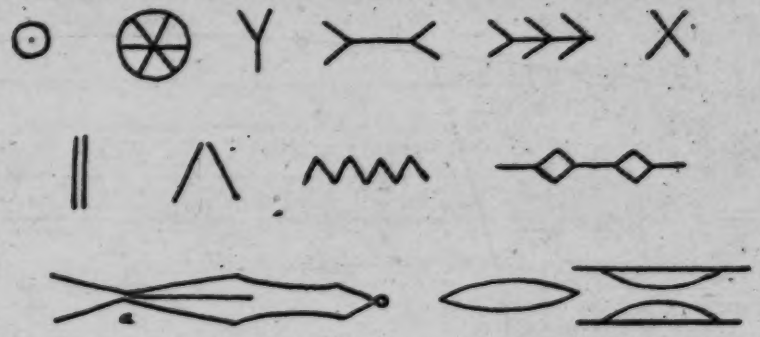

Figure 187. Typical design elements of the Copper Eskimo.

the diagonal lines inside a circle I saw only on a button (Figure 37b). The standard patterns were parallel straight lines and a Y in various combinations; these two were tattooed on the face and wrists (Figures 44, 45), painted, as stated above, on two sleds, inset as strips of fur or skin in the clothing (Figures 28, 29), and engraved on many small bone objects. Fully 60 per cent of the needle-cases were decorated with two Y patterns end to end inside a frame of straight lines (Figures 94, 95, 96), and the commonest design on bow-case handles (Figure 158) was another combination of the Y figure. Radiating lines (two or more), and zigzags, were not common except in tattooing. Rarer still were

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

line might represent the coast along which he had recently been travelling; but when I asked him to name and point out the positions of the capes and streams he had passed on the way, he placed his finger indifferently on places as far apart as Victoria Island and Great Bear Lake. Yet an Eskimo of northern Alaska, who was unable to read and had never held a pencil in his hand, once drew me a remarkably accurate outline of the Colville River and all its tributaries, besides many vivid sketches of camp scenes and the hunting of seals and caribou.

Among the specimens I bought at this time was a large lamp which we immediately put to use for warming up our tent. It was made from soft soapstone, and shaped like an enormous saucer cut in half. We filled it with crushed seal-blubber, and along the straight front edge arranged the wick of cotton-grass seeds, which are not unlike cotton-wool. The lamp, when burning perfectly, gave a low smokeless flame an inch high and about sixteen inches long, quite sufficient to keep us comfortably warm even with the door partly open; but as neither Palaiyak nor I were very skilful in adjusting the wick a thin layer of soot began to form over the inside of the tent. We hired two little girls to keep the dogs away when we were absent, and my "daughters," as the people laughingly called them, gradually assumed responsibility also for the lamp, which they managed to perfection. I rewarded them

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

787
123 sticks that only the white man knew how to manufacture; but even they were not powerful enough to restore his wandering senses. Perhaps my hand would be more efficacious. I laid it on his temple, and saw his eyes rest on me without a gleam of intelligence. Then the madness passed out of them, a pleased smile broke over his countenance, and, quietly turning away, he began a casual conversation with some of the bystanders.

771 Performances of this kind revealed to me the heart of Eskimo religion. The natives trusted in their medicine-men, and the medicine-men, with rare exceptions, believed themselves gifted with supernatural powers. The spirits that wander unseen came at their bidding and obeyed their commands. At times they came unsummoned, and a man raved on the hill-sides or on the frozen sea where no one beheld his frenzy.
771 Hysteria is peculiarly common around the Polar basin;
158 the long winter darkness and the loneliness and silence
171 of the hunter's life make the Arctic peoples more susceptible to this disorder than the rest of the human race. So religion and hysteria went closely hand in hand.

114 After measuring all the adults in this village I
125 arranged with a native to guide me to another some
114 forty miles farther west. We had travelled about half
837 a mile when, looking back, I noticed with surprise that
574 a woman was following in our trail. I turned to my

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

224
225 inland would snap the lashings of their bows. This was not true, for other Eskimos who possessed no weapons except bows and arrows before the introduction of rifles hunted in the interior all through the [354] winter. But these inland Eskimos used caribou fat in • [171] their stone lamps, and caribou fat is a miserable substitute for seal-blubber, which gives a far purer and hotter flame. There lay the real explanation. The Coppermine Eskimos could have hunted the caribou if they wished, but they preferred the sea-ice and its more comfortable homes lit up by the burning blubber.

132 The temperature was only —30° F., 20° higher than inland, when we reached the mouth of the Coppermine; yet the cold seemed more biting, for the air was damp, the atmosphere foggy, and a slight north-
123 east wind blew directly in our faces. We struck out [225] northward over the ice, and on the second day sighted three Eskimos standing over their seal-holes. They viewed with alarm the strange sled and toboggan, so different from any of their own; but our peace-signal banished their fears, and they joyfully guided us to their village a few miles farther on. The whole population turned out to welcome us and to assist in setting up our tent, which they seemed to understand almost [354] as well as ourselves. They understood, also, our stove for burning wood, for they informed us that there was no driftwood within five miles of their settlement and
177 offered to lend us two stone lamps and a little blubber.

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

knowing that without aid they themselves could never reach the timber. One priest went in front to break the trail, the other marched behind the sled, threatening the natives with his rifle whenever they halted or turned back. The terrified Eskimos plotted to kill them and watched for an opportunity. When the priest behind them slackened his guard for a moment they leaped upon him with their knives, stabbed him to death, and shot his companion with the rifle. Then they cut open the bodies of their victims and ate the livers, a gruesome custom general among nearly all Eskimo tribes to render the spirits of the dead innocuous.

The hunters now returned and reported their crime to the people at the mouth of the river, who ascended to the scene of the murders and plundered the sled. Knife was not present on this occasion, but the following summer, while we were establishing our base at Bernard Harbour, he and his kinsmen pillaged the missionaries' cabin at the Dismal Lakes. Several Eskimos in this village that Johansen and I were visiting held property belonging to the priests, and the ringleader of the two murderers actually entertained us in his house. Strangely enough, we were greatly impressed by his bearing, and considered him one of the most enterprising and reliable natives that we had yet encountered.

Police arrested the two murderers about eighteen